REMARKS

Claims 1-3, 5-15, 17-19, 21-40, and 41-52 are presented for consideration. Claims 1, 2, 5, 9, 12, 13, 14, 17, 18, 45, and 52 are currently amended. Claims 4, 16, and 20 were previously cancelled in a prior Office Action Response.

Claims 10, 27, and 36 are objected to as being dependent upon a rejected base claim, but would be allowed if rewritten in independent form. Applicants thank the Examiner, and reserve the right to rewrite claims 10, 27, and 36, accordingly, at a future time, but believe that such amendment may not be necessary at this time.

Claims 1-7, 9, 11-24, 26, 28-24, 37-52 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Indei (U.S. Pat. No. 5,121,077), herein after Indei, in view of applicant's admitted prior art in the background of the specification. Claims 8, 25, and 35 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Indei (U.S. Pat. No. 5,121,077) in view of Kawabuchi et al. (U.S. Pat. No. 5,884,112).

Many of the current rejections are restatements of previously given rejections, sustained for reasons given in the Response to Arguments of the current Office Action. Applicants contacted Examiner Yixing Qin for clarification of his position, and provided Examiner Qin with written responses to his rejections at the time. Applicant's responses are restated below, for convenience.

In essence, it was explained to Examiner Qin that the Indei shows a print server (i.e. Printer Control Device 5a) that generates its own records regarding how much each user (i.e. work station 2, 3, 4) uses printer 5b, and teaches that the records may be backed up to any server (i.e. File Server 6, Mail Server 7) attached to network 1 or to a removable memory (i.e. floppy drive 56, Fig. 8) integral to Printer Control Device 5a. It was emphasized that Print Control Device 5a does not teach or suggest backing up critical data maintained in printer 5b. This distinction is important since some of the Office Action's claim constructions at times equate Indei's Print Control Device 5a to the claimed external interface device. However since all claims require that data (i.e. settings data) be transferred from the printer to the claimed external interface device, and Indei

teaches only that data is backed from his interface device to a server (or a floppy drive), it is clear that Indei's Print Control Device 5a cannot read on the claimed external interface device since Indei provides no mechanism, or suggestion, for transferring data from his printer 5b to his Print Control Device 5a.

The Office Action appeared to assert that Indei suggests the concept of backing up important information irrespective of the type of information. Applicants do not claim to have invented the concept of backing up critical data, but rather show a mechanism (or method) by which critical data maintained within a printer's internal nonvolatile memory may be automatically backed up to an external interface device simply by coupling the external interface device to the printer. Indei is silent on any such construction.

Examiner Qin suggested that the present invention may be better distinguished from the cited prior art if it recited that the interface device is connected to both the printer and to the host device during the backing up operation. Examiner Qin suggested that this would exclude the use of a portable memory device, such as a flash drive, to manually back up information stored in the printer. Firstly, Applicant emphasize that at least claims 5, 11, 22, 28, 30, and 41 already recite that the interface device is external to, and connected to, both the printing apparatus and to the host device. Indeed, at least claims 46 and 52 further emphasizes that the transferring of data from the printing apparatus to the external interface device is an "automated process *not requiring user intervention*." Applicants wonder why these limitations appear to have been overlooked in the current Office Action.

Furthermore, Applicants respectfully point out that it is not clear that flash drives, and printers having an USB flash drive interface connection for accessing internal nonvolatile memory, were known at the time of Applicant's invention, and thus it is not clear that such an assertion is proper. Nonetheless, in an effort to move prosecution forward, Applicants have amended claims 1, 2, 13, 17, and 52 to emphasize that the interface device couples the printing apparatus to the host device.

Examiner Qin further suggested that it would be helpful to add language that would preclude the claimed interface device from being interpreted as a computer. Examiner Qin suggested that it would be helpful to add language stating that the transfer of data from the printing apparatus to the interface device is controlled by the printing apparatus, itself. Applicants again respectfully point out that at least claims 41, 42, 47, and 48 already recite that the transfer of the data from the printer to the external interface device is either partially or fully under control of the printer. Nonetheless, in accordance with the Examiner's suggestion, claims 2, 5, 9, 12, 14, and 18 are currently Amended to recite that the transfer of data is from the printing apparatus to the external interface device is under control of the printing apparatus, or printer.

Applicants had further pointed out that least claim 45 already specified that the interface device lacked a central processing unit, and thus should not have been construed to constitute a computer. Examiner Qin, however, explained that the Office's position is that any device that processes data can read on a fully-functional, self-standing computer. Applicants have therefore amended claim 45 to state that the interface device lacks a data processing unit. It was noted that Fig. 1 of the present application shows that the external interface device includes a converter 133, and the Office questioned if converter 133 could construe a computer. Applicants note, however, that the specification explains that converter 133 "handles voltage level conversion and interface standards conversion" between relay receiver 132 and relay transmitter 134, and thus assert that its function is to assure that data received is represented in a format readable by the printer. This may involve altering voltage levels, or serial to parallel conversion, but the data remains unchanged. In other words, signal processing does take place since the signal representation of the received data my be altered, but the data processing does not take place since the data information remains unchanged (i.e. remains the same).

Below is a restating of Applicant's comments separated into Items 1-5 addressing the current Office Action's Response to Argument's section.

(Item 1)
In the "Response to Arguments" section, the Office Action asserts:

> The applicant's arguments first argument is that
> the interface device of Indei is not necessarily
> external to the printing device. The Indei
> reference shows one possible combination of a
> printer and a print control device in Fig. 2,
> item 5. One can see the various modifications and
> modules of the device in the other figures.
> However, the applicant's invention essentially is
> a re-arrangement of the various modules. Compare,
> for example, Fig. 1 of the applicant's drawings
> with Figs. 3 and 8 (the print control device and
> the backup device for the print control device)
> of Indei. Both essentially disclose the same part
> (e.g. cpu, memory and backup memory,
> communications devices). Thus, the various
> modules are present, except Indei arranges them
> in one particular manner, while the applicant
> arranges them in another.

This is not clear for a couple of reasons. Firstly, in a previous PTO interview, it was agreed that Applicants should add the word "external" to better distinguish the claimed interface device from the cited prior art since the Office Action previously was interchanging components of Indei's Printer Control Device (5a, Fig. 2) with Indei's Printer (5b, Fig. 2). The Office Action appears to still be making this equivalence by virtue of comparing Applicant's Fig. 1 with Indei's Figs. 3 and 8. Applicants respectfully point out that both of Indei's Figs. 3 and 8 show _only_ Indei's _printer control device_ (i.e. 5a) and _do not_ show any printer. By contrast, Applicant's Fig. 1 shows both a printer 101 and the claimed interface device 131. Thus, the Office Action appears to equate components found in Indei's printer control device 5a (i.e. cpu and memory) with components found in Applicant's printer 101, but not found in Applicant's interface device 131. Since the main point of the Office action's rejections of the present invention is equivalence of Indei's printer control device 5a with the claimed interface device, it is not clear what is the relevance of any similarities between Indei's printer control device 5a and a general printer.

In a previous PTO interview, the Office Appeared to take the position that both of Indei's printer control device 5a and printer 5b could be combined into a printer that incorporated the functions of a printer server (i.e. Indei's 5). This was precisely why in the previous Interview, the Examiner had suggested addition of the word "external" to characterize the claimed interface device as being separate form the printer. Applicant's complied in an effort to move the application forward,

despite the fact that the Office Action had not provided, nor is applicant aware, of any printer that includes a printer server function (i.e. includes not only a network card, but also includes a hard drive for spooling print jobs that art managed and sent to other printers, and that predates the present application's priority date of August 30, 2000).

The Office Action also appears to want to extend the term printer to any device that produces print out. This interpretation appears to be a bit overly broad, and to go contrary to the state of technology. For example, a car is a transportation vehicle, but that does not mean that all transportation vehicles are therefore cars.

(Item 2)

The "Response to Arguments" section continues to assert,

> "In regards to the lack of a CPU in the applicant's external memory device, the Examiner points out that even though the external memory does not have a CPU, it still has a converter, which is not a general purpose processor, but is still a specific processor for the conversion of information. Again, the CPU of the applicant's invention is placed in a different location than in the Indei reference, but one knows they are to perform general processing for the printing apparatus as a whole."

Applicants are again at a loss for understanding how this broad-sweeping equivalence is being made. Firstly, a cpu is a specific, and well understood, architecture minimally having a ROM for holding an instruction set, an arithmetic unit for number manipulation, and a bank of registers for holding intervening data values. While it is true that a CPU is a data processing device, this does not necessarily mean that all data processing devices are CPUs.

This is particularly true in the present case where convertor 133 within the claimed interface device (131, Fig. 1) is shown to between relay receiver 132 and relay transmitter 134. As it is known in the art, signal transmission requirements outside one device may be very different than signal transmission requirements inside the device, and a convertor is an integral part of any transceiver (i.e. transmitter and receiver function box) to assure adherence to different voltage and timing requirements. This is clear in Applicant's description of convertor 133, which states,

" A convertor 133 handles voltage level conversion and interface standards conversion for the received command data, and passes the result through a relay transmitter 134 to the printer 101"

As it would be understood from the above description, convertor 132 handle voltage level conversion and any other interface stand conversion requirements (i.e. serial to parallel conversion). This is not equivalent to data processing since no data is being process. Rather the electrical characterization (or representation) of the data is being adjusted, but the data remains unprocessed. This function of a typical transceiver is also described in the Indei reference, wherein he explains in col. 3, lines 1-7,

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"The transceiver 13 on the network side
incorporates a filing protocol and a mailing
protocol for communication with the file server
or mail server connected to the network 1. The
transceiver 13 is adapted to receive a variety of
data, such as control data and print data for the
printer 5b, which is supplied through the network
1 from the work stations 2, 3 and 4."
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As it would be understood from the above citation, Indei explains that the function of a transceiver is to receive data signals in a specific standard format and to retransmit the same data in a second signal standard. Again, no data processing is occurring.

Applicants respectfully ask if the difference between the present invention and the cited prior art might be more clear if the claim term "interface" were changed to "transceiver", since this would better distinguish between Indei's transceiver 13 and Print Control Device 5a?

(Item 3)

The "Response to Arguments" then continues by explaining that...

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"Regarding the backing up of data, the types of
backup data might be different, but the
specification's background admits that printer
settings can be backed up and restored. Indei
discloses that other types of data can be
externally backed up. It would be obvious to back
up any type of data. While, the data might be for
different purposes, there is enough suggestion
for one of ordinary skill to create a device for
the backing up of settings data to an external
memory."
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Again, this statement appears to blur the differences between Indei's Printer Control Device 5a and Printer 5b. While it is true that in the background section of the present application, existing methods of storing internal printer information are described, the background section is silent on the backing up of any information *not internal* to a printer.

By the same token, Indei describes methods of backing up information generated and compiled within his *printer control device* 5a. That is, Indei explains that since printer control device 5a is responsible for managing received print requests, spooling print files, and determining which print files get printed and by what printer, the *printer control device* is best suited for maintaining a record of how long any printer is in use by any specific user.

Please note that printer control device 5a is compiling this information itself, and is *not* backing up any data internal to printer 5b. Indeed, in the general case, the spooled print jobs may be transferred to any of a number or printers. Nonetheless, the point is that the information being backed up is information generated by the printer control device and maintained within the printer control device. Indei does not describe nor suggest backing up any information maintained in printer 5b. This is made clear throughout Indei's description.

Below, we provide a sampling of text excerpts to show that Indei is concerned with backing up information generated and maintained within a printer control device, and not with information generated and maintained within a printer.

Abstract:

In a backup system for a *printer control device*, the important data in the printer control device is formed into a file of important data, and the file of important data thus formed is backed up by a memory such as a file server, a mail server or a floppy disk...

col. 1, lines 15-17

"In general, a *printer control device* handles important data such as billing data for charges for the use of the printer, the user's profile data, and confidential data."

col. 1, lnes 26-31

"If the important data is erased from the *printer control device* for some reason, then the operator must manually reenter the important data by referring to the hard copy."

col. 1, lines 39-42

"Accordingly, an object of this invention is to eliminate the above-described difficulties accompanying a conventional backup system for a *printer control device*."

col. 1, lines 43-50

"More specifically, an object of the invention is to provide a backup system for a *printer control device* in which, when important data is erased from the *printer control device*, it can be quickly restored with ease and with high accuracy.

Another object of the invention is to provide a backup system for a *printer control device* which can positively prevent access to confidential data. "

col. 1, lines 58-61

" The foregoing objects and other objects of the invention have been achieved by the provision of a backup system for a *printer control device* in which important data stored in the *printer control device* can be restored,..."

col. 2, lines 6-11

"With the backup system, the important data in the *printer control [device]* is backed up by a file server, and when necessary, the important data is read from the file server and restored in the *printer control device*. Thus, the important data can be quickly and accurately restored in the *printer control device*."

col. 3, lines 14-30 (Here Indei describes how the printer control device generates its internal data by keeping track of what print files are sent to which printer, and how long each printer in used by any specific user.)

"When a print request is made, the *printer control device* 5a receives it through the transceiver 13, and stores print data in the RAM 17. The CPU 11 converts the print data into an image signal by using the conversion data stored in the magnetic disk 18, and stores the image signal in the image buffer 16. Also, the CPU 11 detects the status of the printer 5b from the status data received through the transceiver 19 on the printer side. When it is detected that the printer 5b is ready for printing, the CPU 11 operates to supply the image signal from the image buffer 16 to the printer 5b through the image line 22.

The use of *printer control device* 5a *organized in this manner insures that important data such as billing data for charges for the use of the printer, user profile data, and confidential data may be reliably handled*."

col. 3, lines 31-37

" One embodiment of the invention, a backup system for a *printer control device* which backs up such important data will be described with reference to FIGS. 1 and 4.

FIG. 1 is a block diagram showing how a novel backup function is given to the *printer control device* 5a according to the invention."

col. 4, lines 66-38

" FIG. 6 is a block diagram showing how novel functions are given to the *printer control device* 5a according to the invention.

col. 5, lines 44-50

" In the second embodiment, the file of important data is transferred to a mail server so that it is held as backup data. If the important data is erased from the file holding section 32 of the *printer control device*, and it is required to restore the important data, the important data can be restored by transferring the file from the mail server according to the mailing protocol."

col. 6, lines 1-7

"Now, a third embodiment of the invention will be described with reference to FIG. 8. The third embodiment is so designed that important data in the *printer control device* is transmitted to an external memory unit such as a floppy disk. When it is necessary to restore the important data in the printer control device, the important data is read from the external memory unit and restored in the printer control device."

col. 6, lines 34-44

"Thus, the important data stored in the *printer control device* has been stored in the floppy disk, effectively backing up the data.

When it is necessary to restore the important data in the file holding section of the *printer control device*, the file read and write control section 51 enables the floppy disk drive control section to read the data from the floppy disk 56. The data thus read is transmitted to the file holding section 52 and is restored quickly and accurately."

col. 6, lines 50-55

"As is apparent from the above description, the important data in the *printer control device* is backed up by transferring it to the file server, mail server or floppy disk instead of printing it out as a hard copy. Therefore, the important data can be quickly restored in the *printer control device* when erased."

Since Indei is concerned with backing up information generated and maintained in his printer control device, and is silent on any information maintained within a printer, the relevance of Indei's teachings as applied to the present application are not entirely clear.

(Item 4)

The "Response to Arguments" lastly attempts to clarify its reasoning for citing a USB device. Specifically, the Office Action explains, ...

> "In regards to the USB connection, USB was merely cited as an example of a well known interface used for <u>drawing power from one device by another</u>. Looking at Indei, <u>the floppy drive can be interpreted as being able to draw power from the print control device since it backs up the print control device</u>. Again, from the arguments above, the exact placement of various modules is an obvious variation."

Again, the above description goes contrary to the claim language. Firstly, the floppy drive is part of (i.e. integral to) the printer control device. Thus, it cannot be interpreted to draw power from the printer control device, when it itself *is* part of the printer control device.

Using the Office Action's construct, it is not clear if the floppy drive is being equated to the interface device or to the host device. If the floppy drive is the interface device, then the Office Action should show how it interface the printer to the host device. If the floppy drive is the host device, then the Office Action should explain how a floppy drive can read on a full computer (i.e. host device).

Furthermore, the claim language do not specify that one device draws power from another device through an interface device. Rather, the claim language specify that the storage memory is *within* the interface, not within another device to which the interface is coupled.

(Item 5)

Lastly, Applicants respectfully point out that at least claim 11 recites that the interface device is directly connected to a printing apparatus and to a host device. None of Indei's embodiments show such a connection.

Also, some claim language clearly specifies that all the backup sequence is under direct control of the printer. It is not clear how any of the cited prior art teach this aspect of the invention.Entry of this Response After Final Rejection, as an earnest attempt to advance prosecution and reduce the number of issues, is respectfully requested. Should the Examiner believe that issues remain outstanding, he is respectfully requested to contact applicants' undersigned attorney in an effort to resolve such issues and advance the case to issue.

Favorable consideration is respectfully requested.

                                        Respectfully submitted,

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